Fig.1

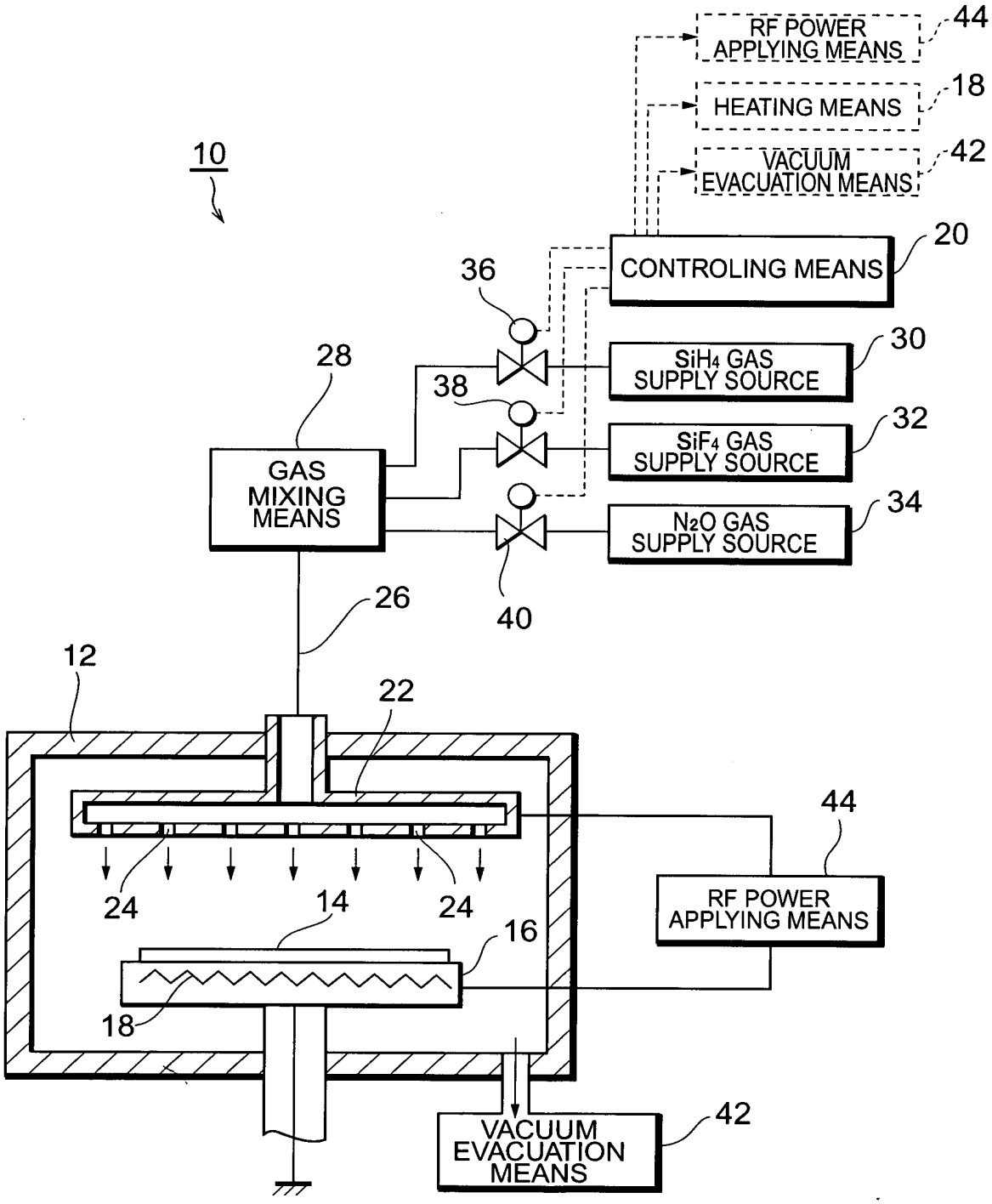

RF POWER APPLYING MEANS
44
HEATING MEANS
18
VACUUM EVACUATION MEANS
42
10
CONTROLING MEANS
20
36
28
38
30
SiH4 GAS SUPPLY SOURCE
32
SiF4 GAS SUPPLY SOURCE
34
N2O GAS SUPPLY SOURCE
GAS MIXING MEANS
40
26
12
22
44
24
14
24
16
RF POWER APPLYING MEANS
18
42
VACUUM EVACUATION MEANS

Fig.2A

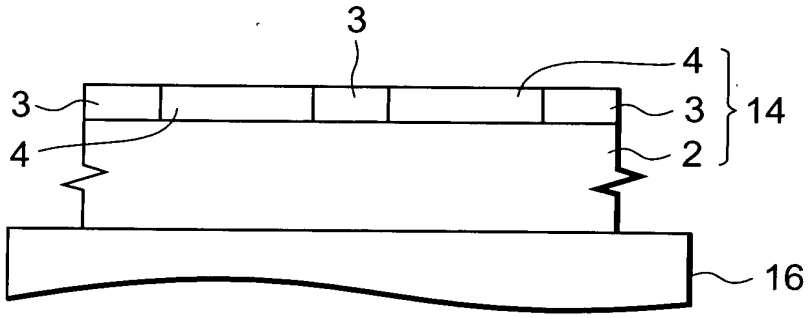


Fig.2B

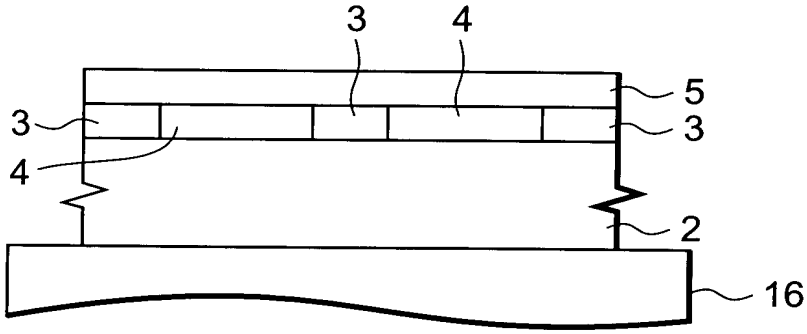


Fig.2C

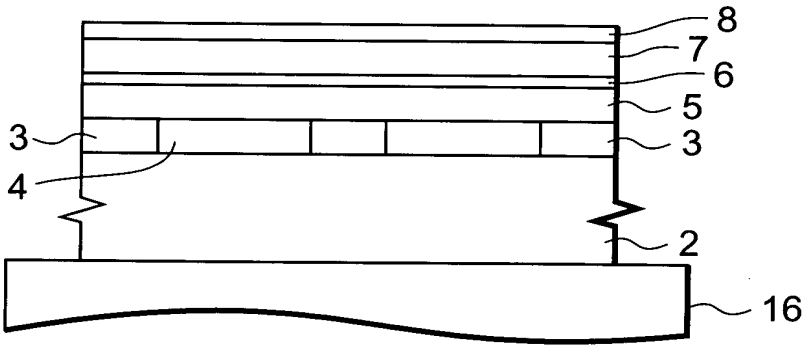


Fig.2D

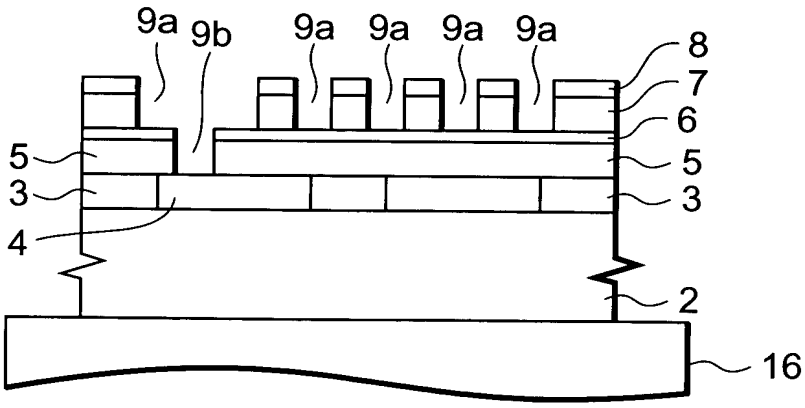


Fig.3

PARAMETER	TEST CONDITIONS	RAUGE OF VARIATION
13.56MHz RF POWER (W)	1500	1200～2000
PARALLEL PLATE ELECTRODE SEPARATION (cm)	1.0	1.0～1.75
CHAMBER PRESSURE (Pa)	493 (3.7Torr)	493～666 (3.7～5.0Torr)
TOTAL FLOW VOLUME(%)	100	100～200
N_2O FLOW VOLUME (sccm)	1500	1500～3000
SiH_4 FLOW VOLUME (sccm)	115	115
SiF_4 FLOW VOLUME (sccm)	130	50～250

Fig.4

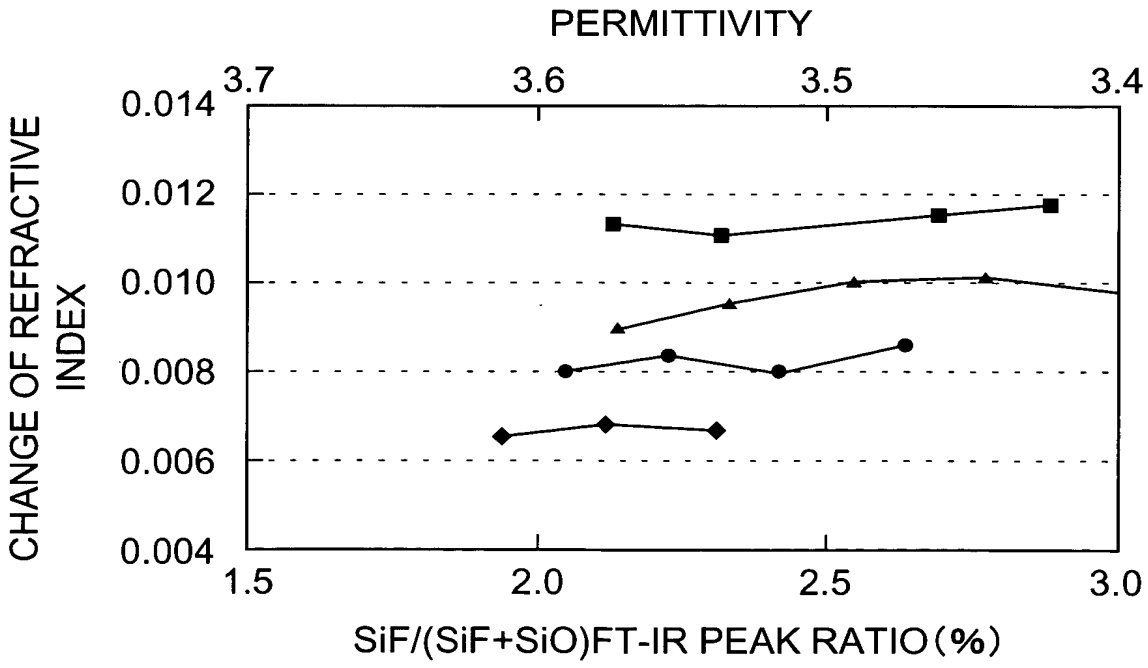
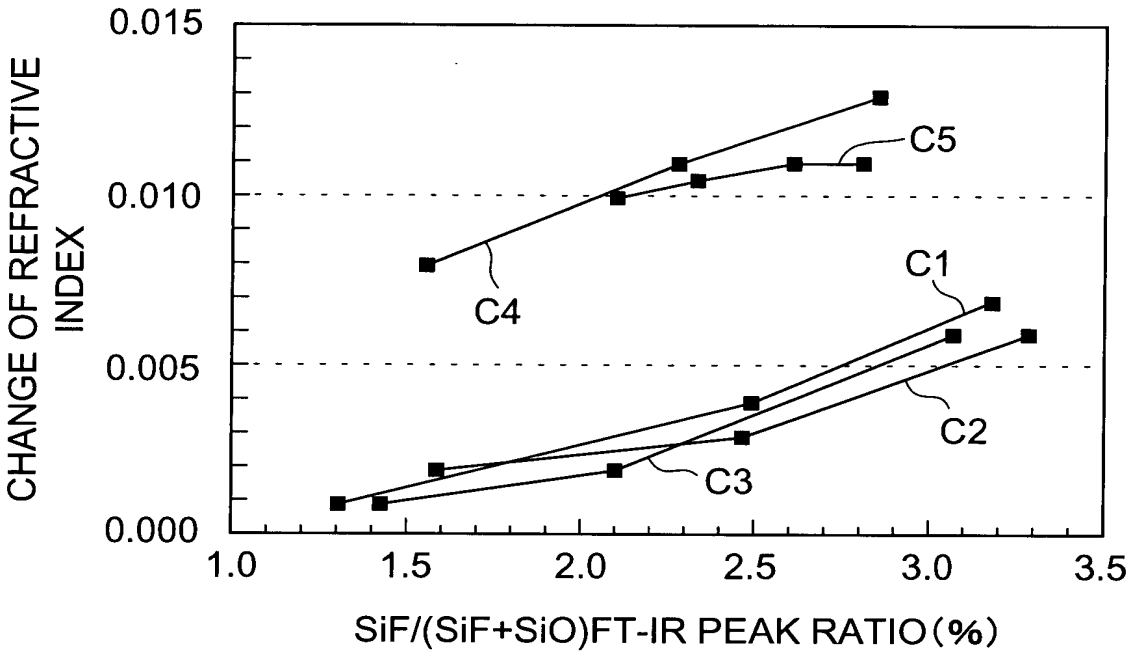


Fig.5


0.015
0.010
0.005
0.000
CHANGE OF REFRACTIVE INDEX
C5
C4
C1
C2
C3
1.0
1.5
2.0
2.5
3.0
3.5
SiF/(SiF+SiO)FT-IR PEAK RATIO(%)

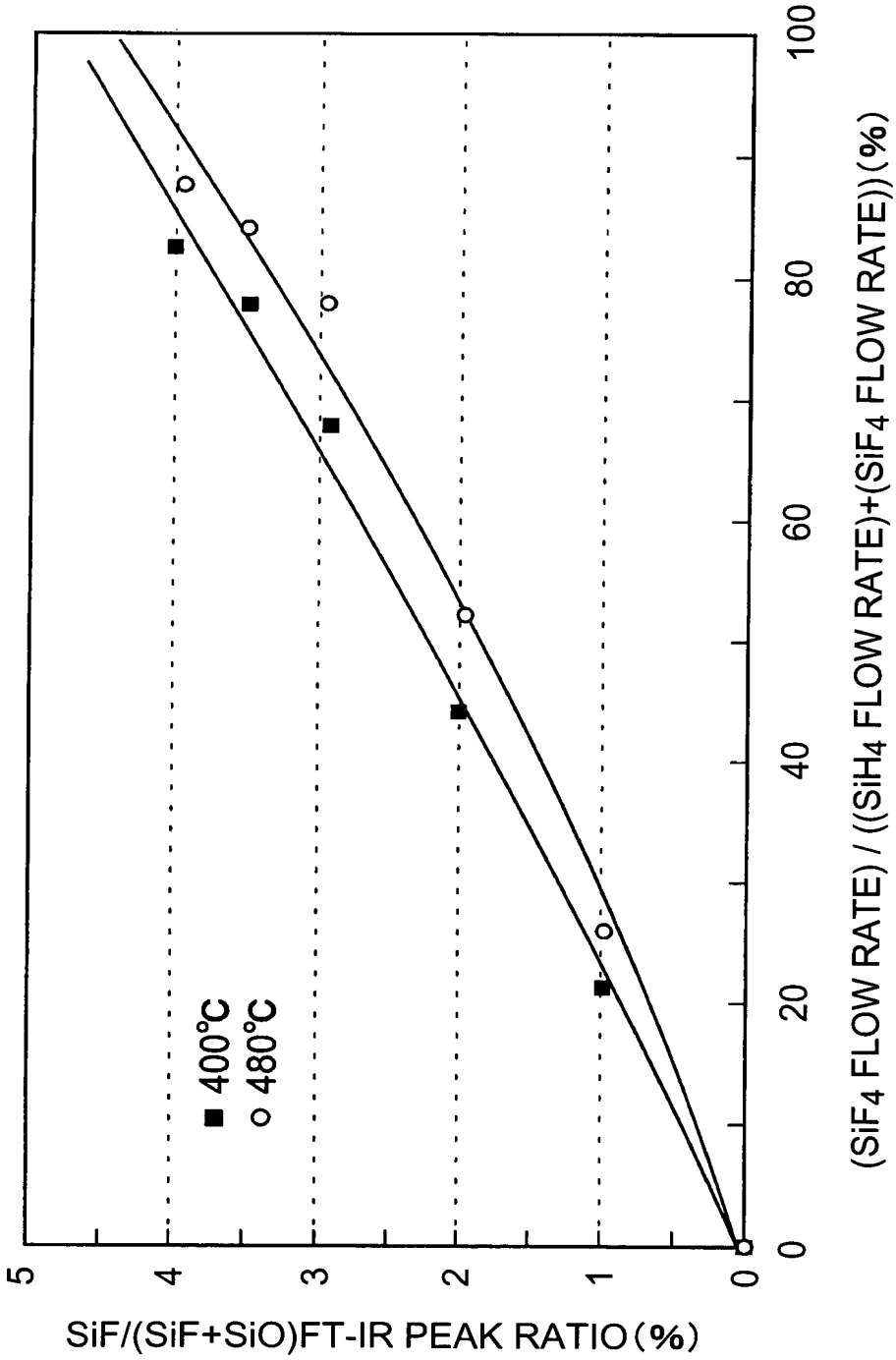


Fig.6

Fig.7

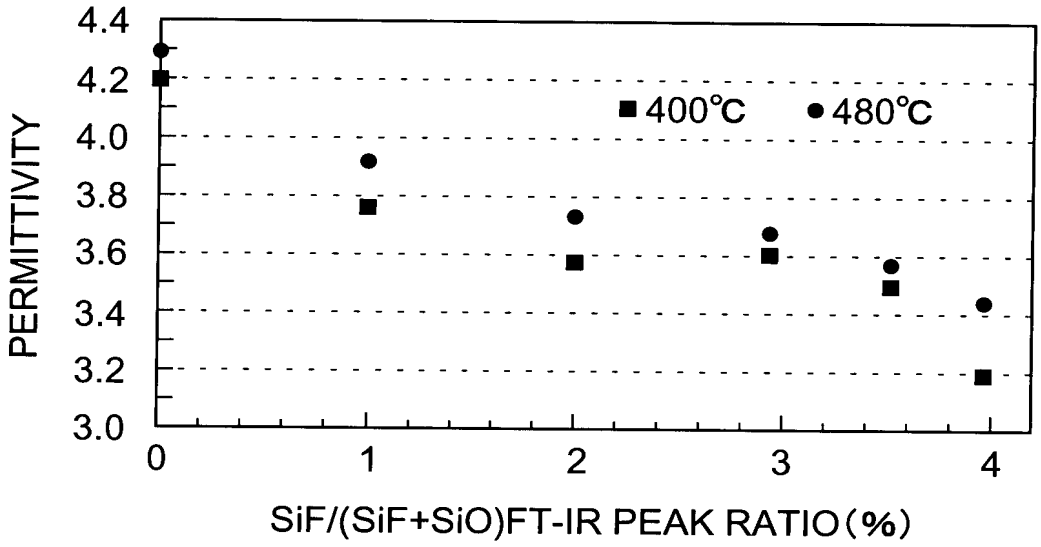

4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
PERMITTIVITY
400℃
480℃
0
1
2
3
4
SiF/(SiF+SiO)FT-IR PEAK RATIO(%)

Fig.8

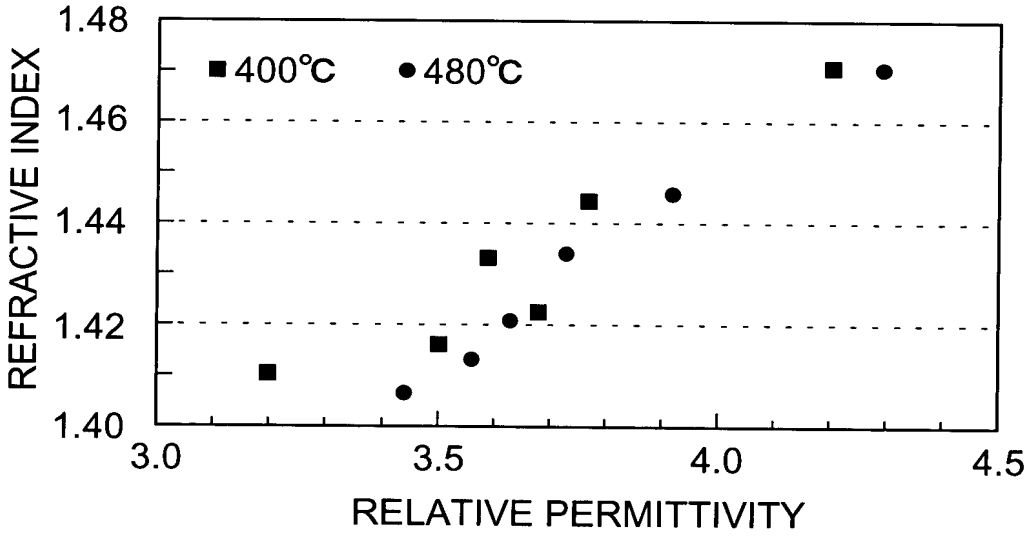

1.48
1.46
1.44
1.42
1.40
REFRACTIVE INDEX
400℃
480℃
3.0
3.5
4.0
4.5
RELATIVE PERMITTIVITY

Fig.9

TYPE OF FILM		SiH_4 FSG			TEOS FSG
FILM FORMING TEMPERAFURE		400℃	440℃	480℃	480℃
(SiOH+HOH)/SiO PEAK RATIO IN FT-IR AFTER LEFT IN CLEAN ROOM	LEFT FOR ONE WEEK	0.5	0.4	1.0	2.5
	LEFT FOR TWO WEEKS	0.7	1.1	0.7	—

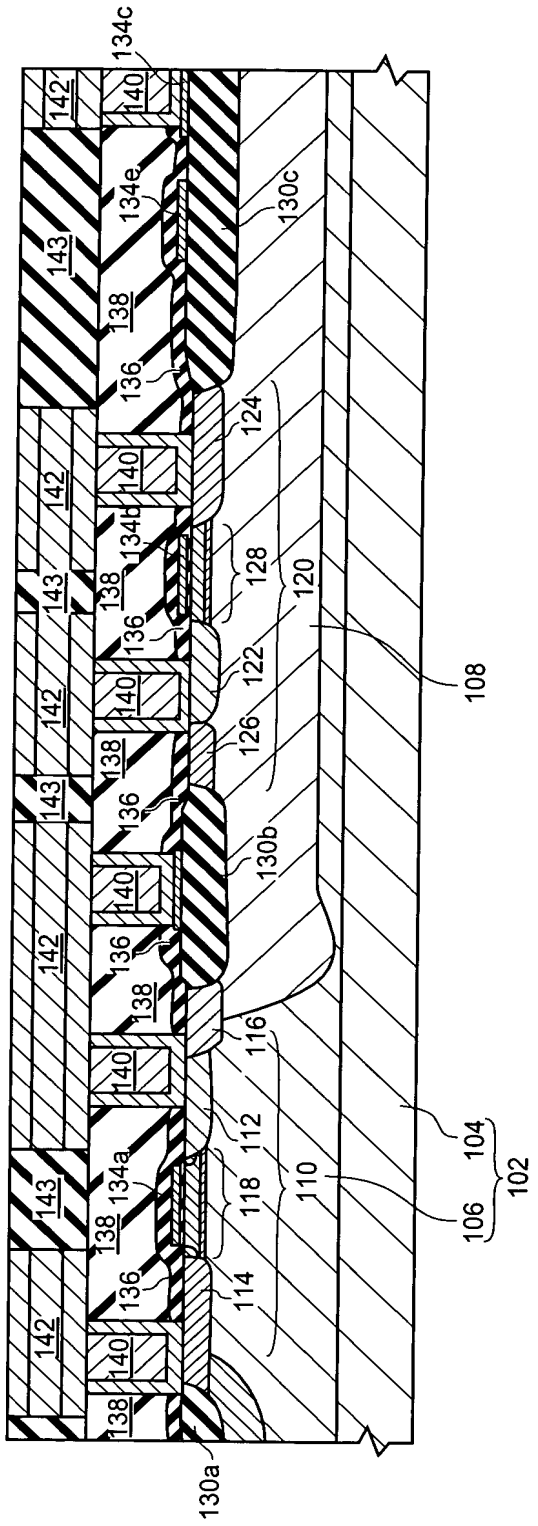
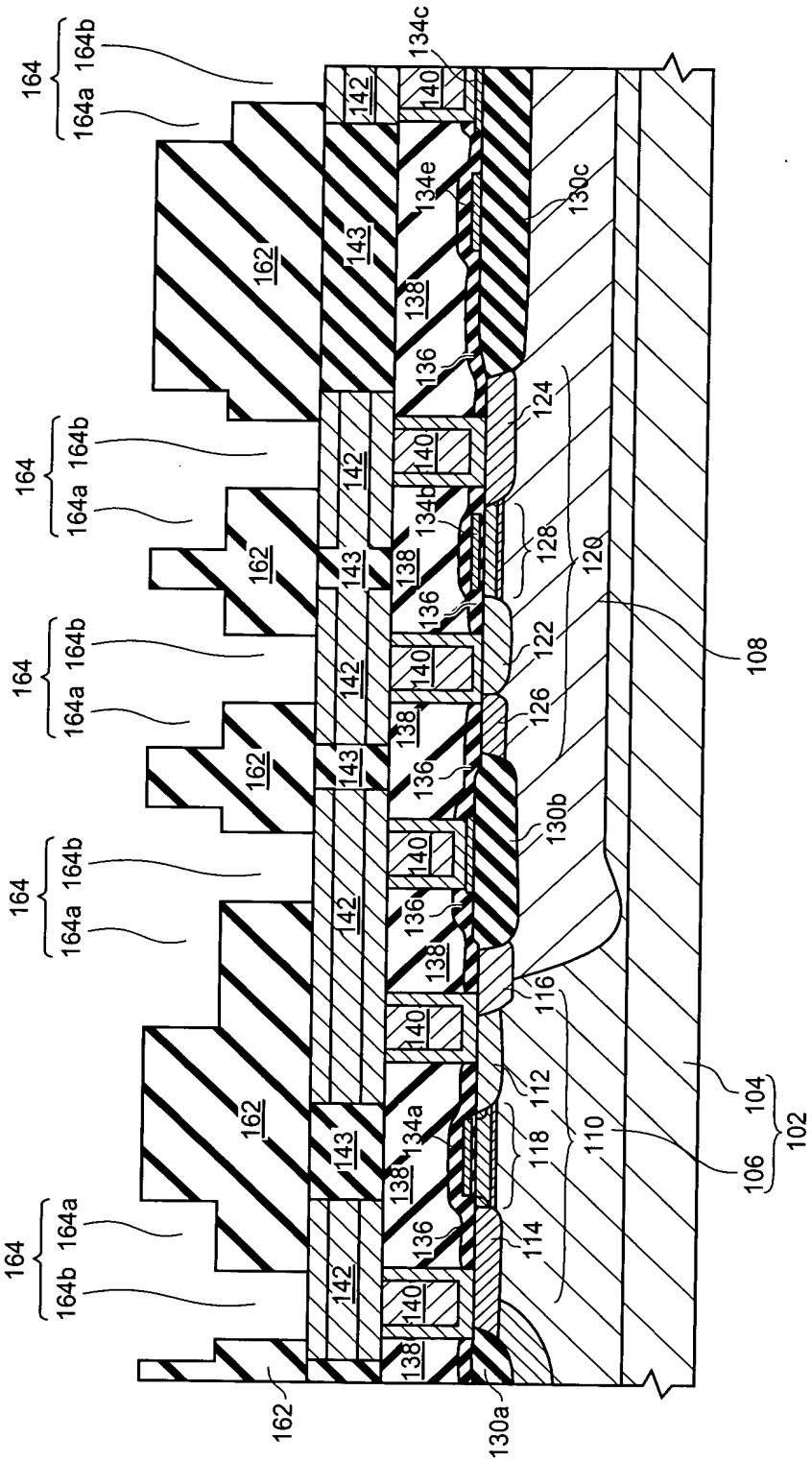

134c
142
140
134e
130c
143
138
136
124
134b
128
120
122
108
126
130b
116
112
104
102
110
106
134a
118
114
130a

Fig.10

Fig.11


164
164a
164b
162
134c
134e
134b
134a
142
140
143
138
136
130c
130b
130a
124
128
120
122
126
108
116
112
118
110
114
104
106
102

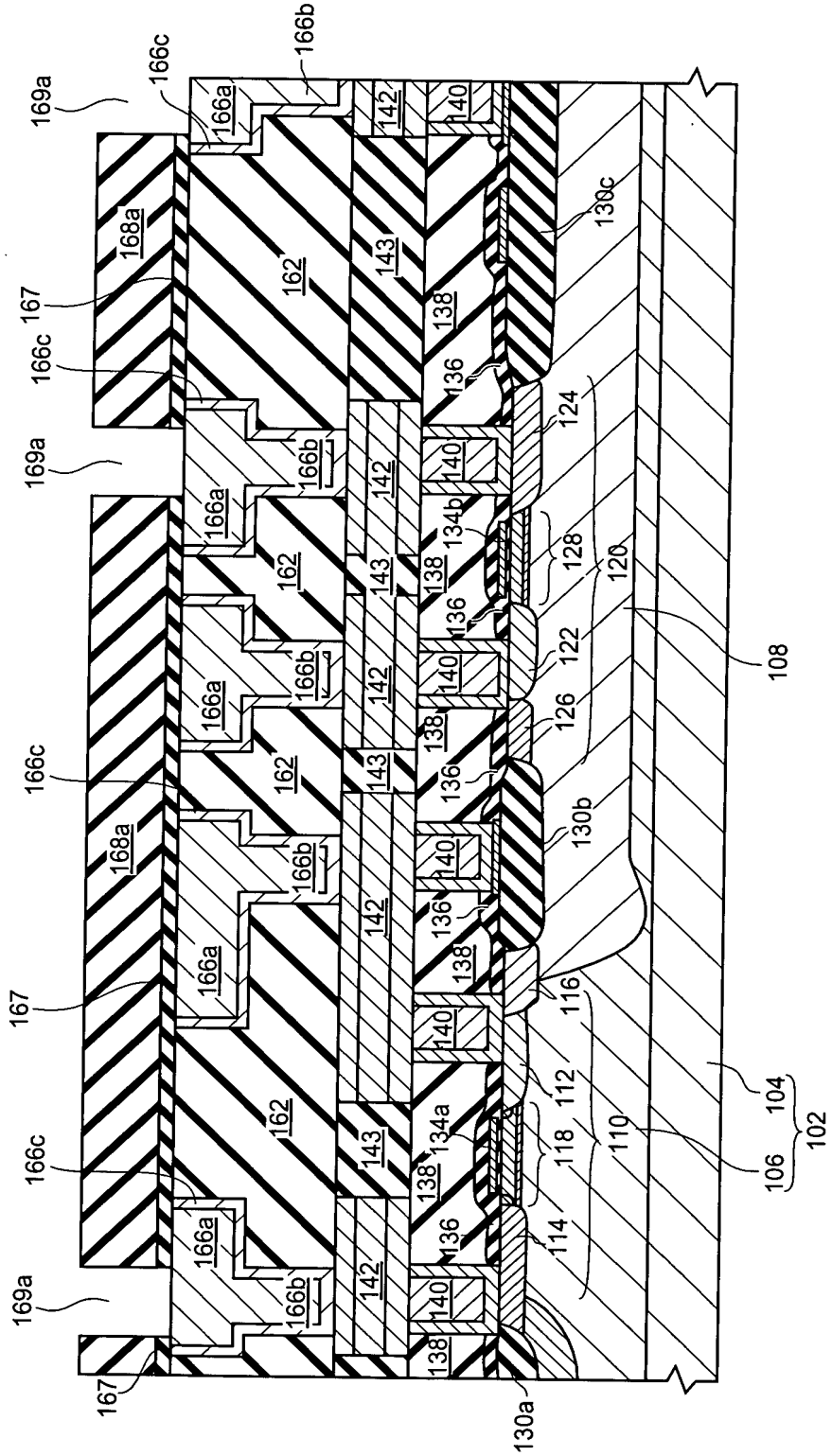

169a
166c
166b
166a
142
140
168a
162
143
138
136
167
124
134b
128
120
122
108
126
130c
130b
116
112
104
102
110
118
106
134a
114
130a

Fig.12

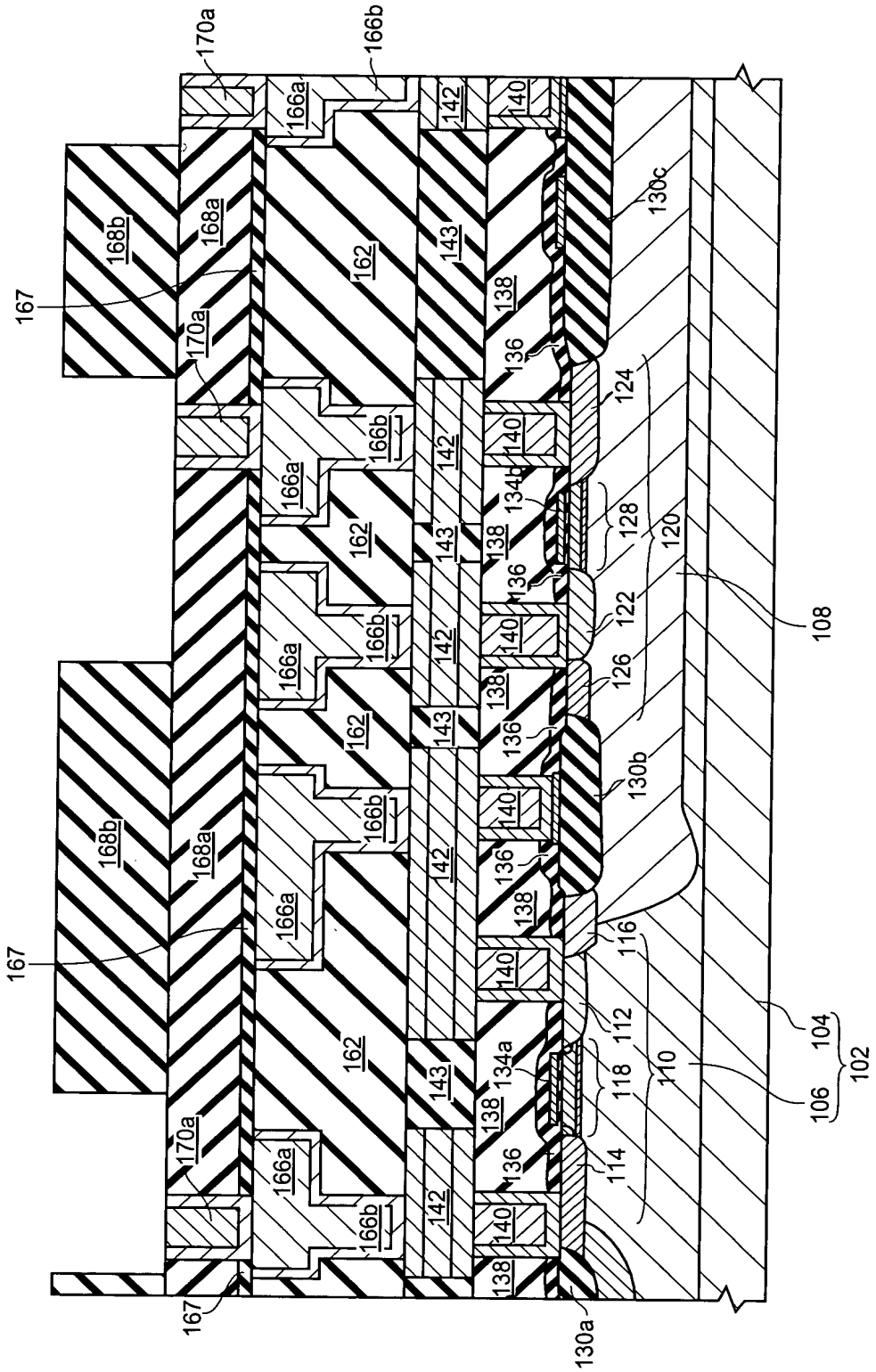

170a
166b
166a
142
140
130c
168b
168a
162
143
138
136
167
124
134b
128
120
122
108
126
130b
116
112
104
102
134a
118
110
106
114
130a

Fig.13

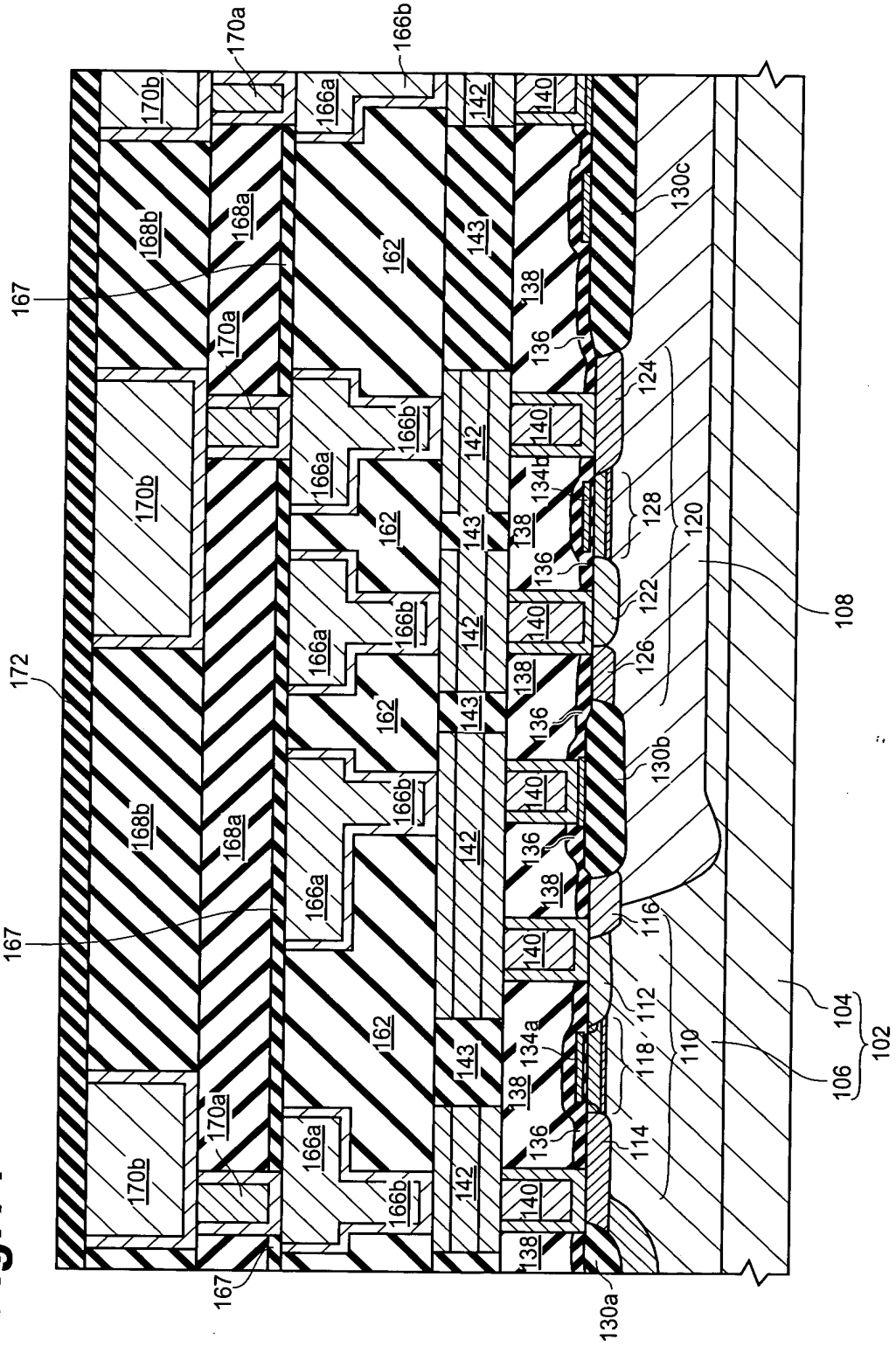

170a
166b
170b
166a
142
140
130c
168b
168a
162
143
138
167
136
124
134b
128
120
122
108
126
172
130b
116
112
104
102
118
110
106
134a
114
130a

Fig.14